

Sustainable Energy and Environment

An Earth System Approach



Sandeep Narayan Kundu | Muhammad Nawaz

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SUSTAINABLE ENERGY AND ENVIRONMENT

An Earth System Approach

Edited by

Sandeep Narayan Kundu, PhD

Muhammad Nawaz, PhD

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Contents

<i>Contributors</i>	<i>ix</i>
<i>Abbreviations</i>	<i>xi</i>
<i>Preface</i>	<i>xv</i>
PART I: EARTH	1
1. Weathering, Erosion, and Deposition	3
Farha Sattar, Muhammad Nawaz, and Sandeep Narayan Kundu	
2. Minerals and Rock-Forming Processes	39
Muhammad Nawaz, Farha Sattar, and Sandeep Narayan Kundu	
3. Earth's Energy Balance and Climate	73
Sandeep Narayan Kundu	
4. Mass Extinctions on Earth	95
Sanghamitra Pradhan, Shreerup Goswami, and Sandeep Narayan Kundu	
PART II: ENERGY	119
5. Energy and Electricity	121
Sanjib Kumar Sahoo	
6. Unconventional Fossil Fuels	141
Deepak Dash, Lokanath Peddinti, and Sandeep Narayan Kundu	
7. Coal Seam Gas: Evaluation, Extraction, and Environmental Issues	173
Debadutta Mohanty	
8. Minerals as Sources of Energy	201
Abani Ranjan Samal	
9. Harvesting Energy from Wind	223
Sandeep Narayan Kundu and Munukutla Sruti Keerti	

PART III: ENVIRONMENT	243
10. Environmental Impacts of Fossil Fuels.....	245
Satyabrata Nayak, Madhumita Das, Binapani Pradhan, and Sandeep Narayan Kundu	
11. Geospatial Technology Applications in Environmental Disaster Management	271
Maher Ibrahim Sameen, Ratiranjana Jena, and Biswajeet Pradhan	
12. Environmental Impacts of Renewable Energy.....	307
Nausheen Mazhar and Sahar Zia	
13. Geological Influence on Surface Water Quality	335
Loo Mei Yee and Sandeep Narayan Kundu	
Index.....	351

CHAPTER 4

Mass Extinctions on Earth

SANGHAMITRA PRADHAN¹, SHREERUP GOSWAMI^{1,*}, and
SANDEEP NARAYAN KUNDU²

¹*Department of Earth Sciences, Sambalpur University, Burla 768019,
Odisha, India*

²*Department of Civil & Environmental Engineering,
National University of Singapore, Singapore*

**Corresponding author. E-mail:goswamishreerup@gmail.com*

ABSTRACT

In the history of 4.6 billion years, Earth has experienced many mysterious and unexplained events of obliteration, which demarcates the boundaries among geological periods. Fossil records are fundamental to the interpretation of these past geological events. Earth was punctuated by five major extinction events. Each event eliminated most of the flourishing species and raised the curtain for new species after. These five major mass extinctions, which occurred during Late Ordovician, Late Devonian, Permian–Triassic transition, Triassic–Jurassic transition, and Cretaceous–Tertiary transition, are often referred to as the five largest Phanerozoic mass extinctions. Climate change and global oceanic circulation played a significant role in these “Big Five” events that wiped out more than half of the pervasive biota. Global ecosystem was disturbed and ruptured many times due to phenomenon like marine transgressions and regressions, global warming and climate change, ocean anoxia, asteroid impact, and intense volcanic activities in the total Earth’s history. This chapter focuses on “Mass Extinction,” which is perhaps the most perplexing event on Earth, and emphasizes on its relative causes and consequences.